

Factoring

Common Factoring

- We are looking for the greatest common factor to put on the outside of the bracket
- if we start with 2 terms, we should end up with 2 terms in the brackets
- if we start with 3 terms, we should end up with 3 terms in the brackets

ex

$$4x-30$$

$$2(2x-15)$$

check
 $2(2x-15)$
 $4x-30 \checkmark$

ALWAYS LOOK FOR A COMMON FACTOR!!!! THIS IS STEP 1 IN EVERY QUESTION

Trinomials

- We have 3 terms - an x^2 , an x and a number
- Use the MAN method (called the sum and product rule) - Multiply to the last number and add to the middle number

ex

$$x^2+9x-10$$

M: -10 N: -1, 10

$$A: 9 \quad (x-1)(x+10) \quad \text{!!}$$

What if there is number in front of the x^2 ?

Still use the MAN method, with a few more steps....

ex

$$2x^2+10x+12$$

Step 1: find a common factor!

$$2(x^2+5x+6)$$

$$2(x+2)(x+3)$$

M: 6
A: 5
N: 2, 3

$$2x^2+13x+21$$

Step 1 - common factor → there is NONE!

let's use MAN UP!

M: $2 \times 21 = 42$
A: 13
N: 6, 7

$$\frac{6}{2x} \quad \frac{7}{2x}$$

$$\downarrow$$

$$\frac{3}{1x}$$

$$(x+3)(2x+7)$$

Try These

$$3x^2+20x-7$$

$$15x^2-7x-2$$

$$6x^2+11x-21$$

M: 11
A: 18
N: 6, -7

$$\frac{11}{6x} \quad \frac{-7}{6x}$$

$$\downarrow$$

$$\frac{3}{1x} \quad (x+3)(6x-7)$$

1 x 126
2 x 63
3 x
7 x 18